NanoFect™ Transfection Reagent

Catalogue number: NF100; Size: 1ml; Prices: $215

Description:

NanoFect™ transfection reagent is a nanotechnology-based reagent with low toxicity providing efficient gene delivery for most cell types.

Highlights:

- Efficient gene delivery for most cell types
- Nanotechnology-based reagent with low toxicity
- Cost-effective alternative to lipid-based products
- Simple protocol for high-throughput transfection

Specifications:

Storage and Stability: 4°C, 6 months

Shipping Conditions: Room temperatue

Restricted Use: For Research Use Only. Not for use in diagnostic or therapeutic procedures.

Quality Control: Each lot of NanoFect™ Transfection Reagent is functionally tested in transfection assays with human embryonic kidney 293 cells.

Related Products:

- Retroviral Packaging Mix Cat# VP200
- Lentiviral Packaging Mix Cat# VP100
- TransPlus Virus Transduction Enhancer Cat# V020

Applications:

Cell Culture > Transfection

Virus Packaging>Transfection

Documents:

Protocol

Product Specification Sheet

Certificate of Analysis

Publications:

1. Sauls K, Greco TM, Wang L, Zou M, Villasmil M, Qian L, et al. Initiating events in direct cardiomyocyte reprogramming. *Cell Rep*. 2018;22:1913-1922
2. Zhou Y, Alimohamadi S, Wang L, Liu Z, Wall JB, Yin C, et al. A loss of function screen of epigenetic modifiers and splicing factors during early stage of cardiac reprogramming. *Stem cells international*. 2018;2018:3814747
3. Haggie PM, Cil O, Lee S, Tan JA, Rivera AA, Phuan PW, et al. Slc26a3 inhibitor identified in small molecule screen blocks colonic fluid absorption and reduces constipation. *JCI Insight*. 2018;3
4. Liu Z, Chen O, Wall JBJ, Zheng M, Zhou Y, Wang L, et al. Systematic comparison of 2a peptides for cloning multi-genes in a polycistronic vector. *Sci Rep*. 2017;7:2193
5. Golubovskaya V, Berahovich R, Zhou H, Xu S, Harto H, Li L, et al. Cd47-car-t cells effectively kill target cancer cells and block pancreatic tumor growth. *Cancers (Basel)*. 2017;9
6. Berahovich R, Xu S, Zhou H, Harto H, Xu Q, Garcia A, et al. Flag-tagged cd19-specific car-t cells eliminate cd19-bearing solid tumor cells in vitro and in vivo. *Front Biosci (Landmark Ed)*. 2017;22:1644-1654

Protocol

For high transfection efficiency and lower toxicity, transfect cells at high density. 50-80% confluency is recommended.

Cells should be plated 18 to 24 hours prior to transfection so that the cell density reaches 50~80% confluency at the time of transfection. Complete culture medium with serum and antibiotics is freshly added to each well 2 hours before transfection.

The following protocol is given for transfection in a 24-well plate, refer to Table 1 for transfection in other culture formats.

1. For each well, add 0.5 ml of normal growth medium (antibiotic does not influence the result) freshly 2 hours before transfection.

2. For each well, dilute 0.5 μg of DNA in 50 μl of DMEM without serum in a tube, and mix gently.

3. Add 1 μl of NanoFect reagent into another tube with 50 μl of DMEM without serum, and mix gently.

4. Add NanoFect/DMEM into DNA/DMEM solution. Mix by vortexing for 5-10 seconds.

5. Incubate for ~15 minutes at room temperature to allow for NanoFect/DNA complexes self-assembly.

6. Add the 100 μl NanoFect/DNA mix drop-wise to the cells in each well and homogenize by gently swirling the plate.

7. Return the plates to the cell culture incubator.

8. Check transfection efficiency 24 to 48 hours post transfection.

Table 1. Recommended Amounts for Different Culture

Culture Dish Surface	Area (cm^2)	Cell Number	Medium Volume (ml)	Plasmid(μg)	NanoFect (μl)	Diluent Volume (μl)
96-well	0.3	1-1.5x10^4	0.1	0.1	0.3	10
48-well	1	2.5-5x10^4	0.25	0.25	0.75	20
24-well	2	0.5-1x10^5	0.5	0.5	1.5	50
12-well	4	1-2x10^5	1	1	3	100
6-Well/35 mm	9.5	2-4x10^5	2	2.5	7.5	200
60 mm/T25	28	5-10x10^5	5	6-8	15-24	300
100 mm/T75	79	1.5-3x10^6	10	15-20	40-60	500
150 mm/T150	153	5-9x10^6	20	25-40	65-120	1000

Note: For different cell types, the optimal ratio of NanoFect (μL): DNA (μg) is around 3:1. We recommend the NanoFect (μL):DNA (μg) ratio of 2:1 as a starting point which usually gives satisfactory transfection efficiency with invisible cytotoxicity, however the amount of NanoFect may be adjusted from 2 to 4 μl per μg of DNA depending on the cell line to be transfected. To ensure the optimal size of NanoFect/DNA complex particles, we recommend using serum-free DMEM with High Glucose to dilute DNA and NanoFect Reagent.